

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Art Unit: : _____

Serial No. : _____
Filing Date : December 6, 2000

Examiner: : _____

Title : Vector Calibration System

BOX PATENT APPLICATION

Assistant Commissioner for Patents

Washington, DC 20231

PRELIMINARY AMENDMENT

Dear Sir:

Applicants submit the following amendments and remarks prior to initial examination of the application.

Amendments

I. **IN THE CLAIMS:**

Please cancel claims 29-33, 35-40, 42-49, and 51 without prejudice.

II. **IN THE SPECIFICATION:**

Please change the title from "Multifrequency Vector Calibration System" to --Vector Calibration System--.

The specification of the present application is substantially identical to the specification of Provisional App. No. 60/190, 226, filed March 15, 2000, benefit of which is claimed. Changes from the provisional's specification and that of the present application are indicated below in amendment form for the convenience of the Examiner.

At page 1, the first paragraph below the title has been changed from the following:

"A portion of the disclosure of this provisional patent application contains material that is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of this application as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights."

to the following:

--The present application claims benefit of U.S. Provisional Application No. 60/190,226, filed March 15, 2000, referred to herein as the '226 application. The '226 application is incorporated herein by reference. All U.S. patents or patent applications, published or appended articles, and any other written materials incorporated by reference into the '226 application are also specifically incorporated herein by reference.--

At page 3, line 1, "straightforward and efficient recursive techniques such as least mean squares (LMS) and recursive least squares (RLS) can be employed" has been changed to --deterministic least squares can be employed. Straightforward and efficient recursive techniques such as least mean squares (LMS) and recursive (i.e., adaptive) least squares (RLS) can also be employed.--.

At page 9, line 18, after "tuner", -- (implemented digitally) -- has been added.

At page 13, line 23, "signal S3a or S3b is a frequency-translated, filtered copy of RF calibration signal S2, which is a frequency-translated copy of baseband calibration signal S1." has been changed to the following:

-- signals S3a and S3b are filtered component signals of a frequency-translated calibration signal S3, which is derived from RF calibration signal S2, which is a frequency-translated copy of baseband calibration signal S1. In other words, the signal flow is as follows: S1 (baseband) to S2 (RF) to S3 (frequency-translated) to S3a and S3b (filtered, quadrature split).--.

At page 16, line 17, after "As may", -- be -- has been added.

At page 17, line 15, "for signal" has been changed to --for a signal--.

At page 17, line 30, "by a the" has been changed to --by the--.

On page 22, the present application lists a reference by R.A. Green labeled "Appendix A" in the first row of Table II. The provisional application listed that reference as "Appendix C," in the third row of its Table II.

On page 23, the present application lists a reference by R.A. Green, R.C. Anderson-Sprecher, and J.W. Pierre labeled "Appendix C" in the third row of Table II. The provisional application listed that reference as "Appendix C," in the first row of its Table II.

On page 22, in the "Appendix A" row of Table II, the text "as yet unpublished" (which appeared in the "Appendix C" row of the provisional's Table II) has been changed to --now published as: IEEE Workshop on Statistical Signal and Array Processing, Aug. 14-16, 2000, pp. 664-667. (Incorporated herein by reference.)--.

At page 26, line 7, "attained be" has been changed to --attained by--.

At page 30, line 12, after "predetermined", -- (or fixed) -- has been added.

At page 30, line 20, the following paragraph has been added:

--Although a predetermined position for antenna 2612 is preferred, antenna 2612 can be placed at an unknown but fixed far-field location in an advantageous variation of array processor 2600. In such a variation, a predetermined phase relationship still exists among the array elements coupled to amplifiers 2622 and 2624, but the relationship is dependent on an unknown angle of arrival. Array processor 2600 can estimate this angle of arrival using conventional techniques (e.g., beamforming, MVDR, MUSIC, root-MUSIC, etc.) and then correct any mismatch. In a further variation, array processor 2600 can update adaptive filtering algorithms to correct mismatch without needing to provide an estimate of the angle of arrival.--.

At page 31, last paragraph, the following text has been added:

--In addition, the inventors contemplate that their inventions include all methods that can be practiced from all suitable combinations of the method claims filed with the application, as well as all apparatus and systems that can be formed from all suitable combinations of the apparatus and system claims filed with the application.--.

Remarks


This amendment cancels a number of claims solely to reduce excess claim fees, reserving the right to reinstate these claims later. All claims originally filed with the application, including the cancelled claims, are believed allowable under the various requirements of 35 U.S.C. §§ 100, 101, 102, 103, and 112.

Upon entry of this amendment, claims 1-28, 34, 41, and 50 are pending, totaling 7 independent claims and 31 total claims. Claims 1, 20, 25, 27, 28, 34, 41, and 50 are independent.

Please telephone the undersigned if it would in any way advance prosecution of this case.

Respectfully submitted,

Dated: December 6, 2000

By: 
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